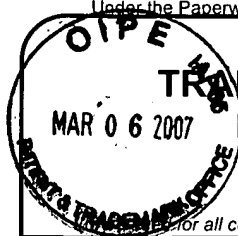


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TRANSMITTAL FORM

Total Number of Pages in This Submission

75

Application Number

10/646 960

Filing Date

08/22/2003

First Named Inventor

Zemel

Art Unit

1723

Examiner Name

Kurtz

Attorney Docket Number

A302

ENCLOSURES (Check all that apply)

- | | | |
|---|---|--|
| <input type="checkbox"/> Fee Transmittal Form | <input type="checkbox"/> Drawing(s) | <input type="checkbox"/> After Allowance Communication to TC |
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| <input type="checkbox"/> Reply to Missing Parts under 37 CFR 1.52 or 1.53 | <input type="text"/> Remarks | |

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name

Anvik Corporation

Signature

Carl C. Kling

Printed name

Carl C. Kling

Date

03/02/2007

Reg. No.

19,137

CERTIFICATE OF TRANSMISSION/MAILING

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FEE TRANSMITTAL

For FY 2007

☒ Applicant claims small entity status. See 37 CFR 1.27TOTAL AMOUNT OF PAYMENT (\$) 250.00

Complete if Known

Application Number	10 / 646,960
Filing Date	08/22/2003
First Named Inventor	Zemel
Examiner Name	Kurtz
Art Unit	1723
Attorney Docket No.	A302

METHOD OF PAYMENT (check all that apply)

☐ Check ☐ Credit Card ☐ Money Order ☐ None ☐ Other (please identify):☒ Deposit Account Deposit Account Number:

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FEE CALCULATION

1. BASIC FILING, SEARCH, AND EXAMINATION FEES

Application Type	FILING FEES		SEARCH FEES		EXAMINATION FEES		Fees Paid (\$)
	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	
Utility	300	150	500	250	200	100	-
Design	200	100	100	50	130	65	-
Plant	200	100	300	150	160	80	-
Reissue	300	150	500	250	600	300	-
Provisional	200	100	0	0	0	0	-

2. EXCESS CLAIM FEES

Fee Description

Each claim over 20 (including Reissues)

Each independent claim over 3 (including Reissues)

Multiple dependent claims

Fee (\$)	Small Entity Fee (\$)
50	25
200	100
360	180

Total Claims Extra Claims Fee (\$)

- 20 or HP = x =

HP = highest number of total claims paid for, if greater than 20.

Indep. Claims Extra Claims Fee (\$)

- 3 or HP = x =

HP = highest number of independent claims paid for, if greater than 3.

Multiple Dependent Claims Fee (\$) Fee Paid (\$)

3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets Extra Sheets Number of each additional 50 or fraction thereof Fee (\$)

- 100 = / 50 = (round up to a whole number) x = Fee Paid (\$)

4. OTHER FEE(S)

Non-English Specification, \$130 fee (no small entity discount)

Other (e.g., late filing surcharge): Appeal Brief \$250

Fees Paid (\$)

SUBMITTED BY

Signature	Carl C. Kling	Registration No. (Attorney/Agent)	19137	Telephone	(974) 345-2442
Name (Print/Type)	Carl C. Kling	Date	3/2/2007		

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Attorney Docket No : A302

Application of : Marc I. Zemel, Leszek Wojcik &
Shyam Raghunandan

Assignee : ANVIK CORPORATION

Serial Number: 10/646960 Filing Date : 08/22/2003

Examiner : Kurtz Art Unit : 1723

Title : **FLUID TREATMENT APPARATUS**

Subject : **Appeal**

Date : March 1, 2007

To : Commissioner for Patents

Sir :

APPEAL BRIEF

(1) Real Party in Interest

The Real Party in Interest is Anvik Corporation, the assignee, as identified in the caption.

(2) Related Appeals and Interferences

There are no related Appeals.

There are no related Interferences. There was, however, a request made to copy a claim from a published patent application. This request was denied by the Examiner because the claim was not yet allowed in either this application or in the published application from which it was copied.

(3) Status of Claims

All claims stand rejected. The latest Office Action affecting the claims was a FINAL Rejection. Claims presented after FINAL Rejection were refused entry.

Claims 1-18 have been canceled.

The following claims remain: 19-24.

Claim 19 stands rejected on grounds of obviousness under 35 USC 103. Cited were Ressler et al. US patent 5,626,768 in view of the

following: Eden et al. US Patent 6,695,664

 Geusic et al. US Patent 6,579,803

 Benoit et al. US PGPUB 2004/0238344

Claim 20, which is dependent on Claim 19, merely adds a limitation to the use of Xenon Iodide (XeI). the prior art citations affecting Claim 19 apply also to Claim 20.

Counsel would normally suggest that the Board of Appeals and Interferences select Claim 19 as representative of the Group of Claims being appealed (Claims 19-23). Nevertheless, because of the crowded nature of the ancient art of making water canteens and also the art of water purification, and also because of the military significance during

wartime, Counsel feels called upon to make the following requests:

That the Board select Claim 19 as representative of the Group (Claims 19-20);

That the Board select Claim 22 as representative of a second Group (Claims 21-23).

The reason for such complexity of grouping is the Examiner's choice of :

Four references supporting a Section 103(a) obviousness rejection of the Claims 19-20 Group;

The same four references plus three additional references supporting a Section 103(a) obviousness rejection applied to Claims 21 and 22 , but with the addition of a different set of two additional references applied to Claim 23.

Counsel recognizes the difficulty of dividing five claims into even two groups of claims.

Applicants are not appealing Claim 24, which was copied from a published patent application for purposes of interference. It stands declined on 35 USC 112, first paragraph, a ground of rejection not applied to any other claim. The Examiner has refused to declare the interference, indicating that the claim has not yet been allowed in any application. Counsel asks that leave be granted to copy the equivalent of Claim 24 if it should be included in a future patent resulting from the published application

(4) Status of Amendments

A proposed Amendment after FINAL Rejection was filed 11/03/2006 but this proposed amendment was not entered, even in part, or even for purposes of appeal.

A mistake by Counsel in reducing the number of claims' to parent Claim 19 and dependent Claims 22 and 23. caused denial of entry of the simplifying amendment dated 10/17/2006. This resulted in eliminating the

limitation to Xenon Iodide in Claim 22, which previously was dependent on Claim 20 (canceled in the non-entered amendment) which re-inserted the limitation to Xenon Iodide. The Examiner denied entry of the Amendment as requiring additional consideration, even though Claim 23 retained the Xenon Iodide limitation. Claim 19 never was limited to Xenon Iodide.

Since the application was already under FINAL rejection, the Examiner was not required to enter the amendment. The issue thus reverts to allowability of the following claims:

Claims 19-23

There was one additional claim, Claim 24, which was copied for interference purposes after being published in a patent application filed by another party. Claim 24 was rejected under section 112 as lacking clarity, and also was rejected as inappropriate because it has not been allowed in the published application from which it was copied. Counsel, of course, cannot confirm or deny such allowability in the adversely-held patent application.

(5) Summary of Invention

The invention is a water-treating canteen, featuring a water-containing body and an active purifying element. The active purifying element is a micro-discharge array with a portable power unit. The micro-discharge array emits purifying ultraviolet rays through the water. The micro-discharge array also helps provide support to a lightweight container wall.

Nuances of the invention beyond parent Claim 19 include the following:

Claim 20 -- Xenon Iodide as the UV-emissive gas in the microdischarge array.

Claim 21 -- Microdischarge array is spiral-wound.

Claim 22 -- Conjugation is as pipe extender rather than canteen.

Claim 23 -- Lightweight canteen, partially supported by micro-discharge array.

(6) Issues

Issues are Section 103 obviousness over various combinations of prior art. The principal reference is Ressler et al. '768.

(7) Grouping of Claims

Claims subject to this Appeal are as follows:

Claims 19-23

Claims 1-18 have been canceled. Claim 24, copied from a published patent application for purposes of interference, has not been entered by the Examiner because the claim is not allowed in the other application.

Counsel suggests Claim 19 as representative of all remaining claims (Claims 19-23).

Claim 19, as parent, would normally be representative of all its dependent claims. However, other claims 22 and 23 have been rejected on different groups of prior art. The recently revised MPEP authorization to allow dependent claims based upon allowance of the parent claim

would appear to resolve the need for multiple groups of claims here. Nevertheless, the Board is asked to suggest allowance of such dependent claims, on their own merits even if Claim 19 should fail.

8) Argument

Section 103 -- Concern for Obviousness

The Examiner states the appropriate statute, which features the terms “not identically disclosed” and “subject matter as a whole would have been obvious.” Such presumed obviousness must be to a “person having ordinary skill” and such ordinary skill must be “in the art” and “at the time.” This tough decision, in practice, generally does not follow the origin of the statute, which must define the person by job and job description. In practice, the tough decision is left to the Examiner and Counsel, usually departing from the background capability and knowledge of the person having ordinary skill, and going directly to the documents. The document group typically is a principal reference plus one or more secondary references. The primary reference must

establish a situation defining a problem needing solution better, or at least different from, any such solution within the primary reference proper. The secondary reference must then be quite easily found within the documentation of the related art.

Section 103 is thus the classic problem requiring the Examiner and Counsel to consult and agree to a presumption contrary to fact. If a single patent or single publication teaches the invention, there is a YES/NO decision under Section 102, but there is no such single patent or single publication. There is only a composite of two or more prior art items, one or both of which may be conjecture on what the fabled "person of ordinary skill in the art" is presumed to know without experimentation or inference.

The origins of the US patent law were in the lifetimes of Benjamin Franklin and Thomas Jefferson, both quite inventive. At that time, the person of ordinary skill in the art was typically the journeyman, who would make the journey to the job site and do the job. The journeyman typically had learned the trade as an apprentice. Neither apprentice nor journeyman was not expected to invent. The apprentice was expected to fetch, keep quiet and learn. The journeyman was expected to solve

ordinary problems using a selection from a group of ordinary solutions known to him and to his journeyman competitors. These distinctions are still used in skilled trades such as electrician, where unions and licensing differentiate between apprentice electrician, journeyman electrician and master electrician. Franklin, a person of partial grammar school education, was so inventive that he was referred to as "Doctor Franklin" and was world famous and honored for such things as bi-focal lenses, lightning rods, and a remarkably efficient fireplace insert stove. Franklin simply bypassed the usual steps of apprentice and journeyman (except in his primary trade of printing) and went directly to international fame as a master.

The Examiner cites Ressler et al. '768 as the primary reference, and cites Eden et al. '664 and Geusic et al. '803 and Benoit et al. US Publication '344 as a composite raising a concern of obviousness.

To start with, it is best to consider identification of the person of ordinary skill in the art. What is the job description of such person? What, indeed, is the art? Is the person a journeyman water purification

plumber? Is he a journeyman canteen maker? Is he or she a soldier or perhaps a hiker who carries a canteen? After perhaps ten thousand years of humans carrying a spectrum of gourds to goatskin water bags to wooden canteens to military tin-bottle-wrapped-in-khaki canteens, does virtually everybody from boy scout to jungle explorer qualify as a person of ordinary skill in the art? What about water purification? Is the Culligan man such a person skilled in the art? What about the journeyman plumber who installs UV treatment apparatus? Was Kipling such a person skilled in the art when he wrote Gunga Din? What do the Culligan man, the journeyman plumber, and the poet know about portable personal water purification? Possibly nothing at all. How do we characterize the person skilled in the art?

Everybody knows the problem! We all want a lightweight, cheap, problem-free purifying canteen when we must carry our own drinking water. But should we go easy on the principal reference? No, because the principal reference must present the framework of the basic solution -- except for an identified problem. The principal reference must also define the lack and suggest a class of particular solutions leading to the

particular solution in the rejected claim. Any failure, and the claim is allowable.

So let's look at Ressler et al. '768. Ressler et al. '768 fails the preamble "**Portable** apparatus for **personal** water purification." Ressler et al. '768 is not portable. Ressler et al. '768 is not personal. Ressler et al. '768 does not suggest any solution.

Ressler et al. '768 also fails "...flexible sealed micro-discharge array filled with UV-emissive gas [etc.] mounted in ... said treatment chamber ... [and] " ... means mounting said flexible microdischarge array inside said water treatment chamber to restrict water flow channels to effective purifying range..." Ressler et al. '768 not only fails to suggest the solution, but has not only a different solution but a different problem. Ressler et al. '768 postulates an opaque liquid. Their specification identifies the problem as opacity in "some applications such as industrial cooling fluids such as oil and water emulsions" (Column 1, lines 36-42). Such opaque fluids are to be purified, and provide a baffled or otherwise restricted flow and turbulence enforced by a pump (See Column 2, lines

20-23) to make sure that the flow is within effective purifying range of their UV lamp. Ressler et al. '768. also recommend returning sterilized fluid back to the main reservoir in situations where there is a circulating fluid, for example a fluid used in a closed cooling system, and suggest that less-than-complete sterilization may suffice. Note that this is contra-indicated insofar as drinking water purity is concerned.

The Examiner erred in continuing to cite Ressler et al. '768 as principal reference in support of Section 103(a) Obviousness. The Examiner was repeatedly requested to withdraw Ressler et al. '768 as a primary reference, since Ressler et al. '768 suggests contrary solutions, not the solution claimed in this patent application, and since Ressler et al. faces contrary problems. This patent application faces and solves many problems, but does not face the problems of partial sterilization of high-flow opaque industrial coolants, and does not have an excimer UV lamp in a separate U.V. exposure apparatus 16 as recommended by Ressler et al. '768.

Ressler et al. '768 fails as principal reference because it uses greatly

differing techniques to accomplish a greatly different task. Ressler et al. '768 is not a portable personal water purifier. Ressler et al. '768 does not expect anyone to drink the water. Ressler et al. '768 does not provide a canteen. Ressler et al. '768 is not portable. Ressler et al. '768 has a separate Main Fluid Reservoir 12 and separate U.V. Exposure Apparatus 16. Ressler et al. '768 features a Main Pump 15 to feed liquid from Main Fluid Reservoir 12 to a Use Device.

Ressler et al. '768 fails to justify the following statements:

“...teaches a portable apparatus...”

“...for personal water purification...”

“...a flexible sealed microdischarge array filled with UV-emissive gas ...”

“...means mounting said flexible microdischarge array inside said water treatment chamber to restrict water flow channels to effective purifying range of such emission.”

The principal reference -- Ressler et al. '768 -- absolutely fails. The Examiner is erroneous in basing a rejection on the false notion that

Ressler et al. '768 could [without experimentation] be made into a purifying canteen. Not a chance! Too big. Too heavy. Too demanding of permanent installation. Too optimized for industrial applications. Too expensive. Too dangerous because of the breakable lamp containing gas. The Examiner has already stated that Ressler et al. "...does not teach the array being flexible, the gas being 1-2 atm or the emission range of 250-26- nm." The Examiner is requested to withdraw Ressler et al. '768 as primary reference. These things are not inconsequential. Ressler et al. does one thing one way – permanently-mounted UV-lamp-exposure of opaque fluid to reduce bacteria to a level acceptable for an industrial use, using a reservoir, a treatment chamber separate from the reservoir, and a pump. The Ressler et al. installation is doubtless useful -- but certainly not a purifying canteen. This would be like using a pipeline as a baby bottle. The Examiner was asked to withdraw Ressler et al. as the primary reference. This Board is asked to withdraw Ressler et al.

With Ressler et al. withdrawn, the concern then must be whether it is proper, for purposes of showing obviousness, to use the general desire for a cheap, effective, lightweight, portable canteen as the primary

reference, and then to add the exact purifying mechanism of this patent application. None of the other three references provides a complete solution. The first issue to add to this ancient canteen is any purifying mechanism. Even if one should postulate the desire, and maybe even postulate adding some chlorine bleach, the issue remains whether the inventors here merely install a known purifying mechanism in a known configuration.

Professor Eden and his co-inventors at the University of Illinois do not provide a complete solution. They provide a high-quality flexible microdischarge array which can operate at operational pressures near atmospheric pressure as contrasted to the vacuum in the usual glass U. V. fluorescent tubes. Their microdischarge array, while remarkable, is merely a catalog component to be purchased by others to install as desired. Professor Eden and his group do not suggest the use of their flexible microdischarge array in a purifying canteen such as that shown in this patent application. While the microdischarge array might even be usable in a portable purifying canteen according to the teaching of this patent application, it is not a complete solution—a great catalog

component, but merely a catalog component.

So far, we have only the general desire for a canteen (replacement for Ressler et al, as primary reference), plus a general desire for potable water from such canteen, plus an available flexible microdischarge array available as a catalog item.

Geusic adds another microdischarge array available as a catalog item replacement for Eden et al. ccccc

Geusic uses pressures in the range of 1-2 atmospheres, a relatively difficult arrangement in a portable canteen.

Benoit shows use of XeI in a microdischarge array. Applicants do not claim novelty in the selection of XeI, a relatively well-known source of UV radiation, but consider this of sufficient value to support a dependent claim under the recent rules eliminating the "exhausted combination" rules. Applicants expect allowance based upon allowance of its parent claim.

Note, however, that there are a number of available microdischarge arrays operating at a number of pressures with differing voltages and with differing emissive gases. Emission dimensions are important, because of radiation effectiveness as a function of travel through water.

Realities of portability are powerful. In the purifying canteen, or in the purifying pipe extender, power adaptability must be supplied which is lightweight and safe both to persons and components. Filtering is important. The common nature of these aspects does not necessarily make them obvious. Even so, there might be a level of invention problem if this were the sole claim to novelty and inventive merit. The problems of the microdischarge array add a more fertile field for novelty and inventive merit. The microdischarge array must be sealed. The microdischarge array must be easy to clean. The microdischarge array must be tough to resist damage. And, for the portable purifier to work, the rolled microdischarge array must be evenly spaced at an exact dimension appropriate for penetration-enforced sterilization and also appropriate for water flow. In the preferred embodiment this spacing is 2.5 centimeters. This dimension is provided by "separation assurance" means. The

separation assurance means shown is spiral separators 8 and 9 in Fig. 1; stiffeners 21 held in place by items 30, 30a and 30b in Fig. 13; and by chain separators 31 in Fig. 15.

In conclusion, this Board is petitioned to direct the Examiner to withdraw Ressler et al. '768 as principal reference, and to reconsider allowability of all appealed claims over the remaining prior art.

Respectfully,

Marc I. Zemel, Leszek Wojcik &
Shyam Raghunandan,
Inventors

By


Carl . Kling, Attorney

(Reg. 19,137)

APPENDIX

Claim 19.

Portable apparatus for personal water purification, comprising:

- a) a water treatment chamber having water input/output means;
- b) a flexible sealed microdischarge array filled with UV-emissive gas at a pressure in the range 1-2 atmospheres, to emit in the range 250-260 nm, mounted in said treatment chamber in effective radiation proximity to such water in said treatment chamber;
- c) power means connected to said microdischarge array effective to cause emission of ultraviolet radiation for water purification; and
- d) means mounting said flexible microdischarge array inside said water treatment chamber to restrict water flow channels to effective purifying range of such emission.

Claim 20.

Portable apparatus for personal water purification, according to Claim 19, further characterized in that the selected emissive gas is XeI.

Claim 21.

Portable apparatus for personal water purification, according to Claim 20, wherein the configuration is in-line, sequenced as input, spacer, filter, said flexible microdischarge array with separation assurance means spiral-wound inside said water treatment chamber, spacer and output.

Claim 22.

Portable apparatus for personal water purification, according to Claim 20, wherein said flexible microdischarge array is configured as a spiral-wound rectangular scroll (30), arranged loosely for in-line water flow between wrapped layers held at nominal separation for water flow by separation assurance means.

Claim 23.

Portable apparatus for personal water purification, according to Claim 20, wherein the configuration is as a large canteen, having indicating means, interior access means, filter, and lightweight outer walls at least partially supported from collapse by said emissive gas, and interior access means.